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somites of the third, fourth, and fifth abdominal segments. These cells, which seem to be restricted to the dorsal wall of their respective somites, subsequently collect about a common center to form on either side a small oval body, — the ovary or testis. The vasa deferentia and oviducts arise from the mesoderm. The former terminate in the tenth, the latter in the seventh abdominal segment, in both cases in terminal ampullæ as described by Wheeler for *Xiphidium*. A thickening of the hypodermis over the terminal ampullæ represents the rudiment of the ectodermal portions of the reproductive organs (ductus ejaculatorius and vagina).

The embryonic envelopes of the Hymenoptera promise to yield interesting results when carefully investigated. In the *Phytophaga* the envelopes are complete and typical, as shown by Graber in *Hylotoma berberidis*. In the other Hymenoptera hitherto studied only one envelope, the amnion, is formed. Carrière shows that it arises in the wall-bee from the peripheral portion of the blastoderm and persists only a short time. The exact mode of its obliteration is not clearly figured or described. By the time of hatching it has almost completely disappeared. Bürger claims that embryos of *Polistes gallica*, at least in the later stages, agree with *Chalicodoma* in possessing only a single embryonic envelope, and that this also disappears before the hatching of the larva.

WILLIAM MORTON WHEELER.

**Tumors and Germ-Layers.** — Since tissue differentiation in organisms has come to occupy so large a place in the attention of biologists, the general subject of tumors has assumed a biological interest that is but little less than its medical interest.

A recent paper by Dr. D. Montgomery, with a note by Dr. L. F. Barker,<sup>1</sup> dealing with a case of teratoma, contains so much of interest that it deserves to be more widely known to biologists than it is likely to become through the pages of a medical journal. The tumor was taken from the peritoneal cavity of a girl twelve years old. It was of the solid variety, *i.e.*, it was not a single large cyst, but was a mass of tissue with a great number of small cysts scattered throughout its substance. Its weight was two pounds. It was situated on the right side of the abdomen, and was attached to the ascending

<sup>1</sup> A Teratoma of the Abdominal Cavity, by Dougless W. Montgomery, M.D., with a Note on Dr. D. W. Montgomery's Case of Teratoma, by Lewellys F. Barker, M.D. *The Journ. of Experimental Medicine*, vol. iii (May, 1898), No. 3, pp. 259-292.

colon throughout nearly its entire length, as well as to the adjacent peritoneum. According to Dr. W. F. McNutt, who performed the operation, the abdominal veins were dilated, but the tumor cleaved out easily and apparently completely. No large vessels were encountered during the removal beyond "such as run in brittle adhesions," though the peritoneal surface, from which the growth was removed, was left raw and bleeding.

The tumor "contained tissues and portions of organs corresponding in embryonic origin to all the germinal layers. Corresponding to the epiblast there were skin with cutaneous organs and appendages, central nervous system, peripheral nerves, and the rudiments of eye structure.

"The hypoblast was represented by mucous glands, tubes, and cysts, with epithelial lining and surrounded by smooth muscle. The mesoblastic tissues consisted of bone, cartilage, white fibrous tissue, yellow elastic tissue, mucoid connective tissue, adipose tissue, smooth muscle fiber, and blood vessels."

The nervous tissue was in large quantity, but no ganglionic cells were made out with certainty. Of the eye only portions of the pigmented layer of the retina, and possibly parts of the sclera, were found; but the former were so distinct and characteristic that both observers agree in considering error of identification as impossible. Highly significant concerning this tissue is the fact that "similar polygonal pigmented cells are to be seen irregularly distributed through the sections, sometimes apparently in solid portions of the tissues, sometimes lining small irregular slit-like spaces, and in one instance lining a space which is continuous with the cavity lined by ependymal epithelium, which probably corresponds to brain ventricle."

The blood in the vessels had all the characteristics of adult blood. No nucleated red cells were found. No trace of a heart was present.

After the operation the patient seemed to do well for a time, but in about a month it was found that the tumor was growing again, and it was removed a second time. The recurrent growth did not come away whole as did the first, as it was softer, more friable, and involved the peritoneum both more widely and more intimately than did the first. Like the original, "it contained tissues from all three germ layers. Indeed, all the structures met with in the original tumor could be found in various parts of the tissue removed at the second operation."

The authors discuss at some length the various theories concerning the origin of dermoid tumors, and both reach the conclusion that the *fœtus in fœtu* theory of Meckel explains most satisfactorily the present case. Biologically considered, some of the facts presented are very difficult to understand, even on this theory; *e.g.*, the widely distributed condition of the eye tissue and the recurrence of the entire tumor.

Dr. Montgomery assumes that some fragments of the original growth must have remained behind after the first operation, despite the fact that such did not seem to be the case; and that these fragments contained representatives of all the tissues found in the tumor.

W. E. R.

**A New Journal of Parasitology.**—The attention of naturalists was attracted last year by the announcement that the publication of a new journal devoted to the study of parasites would be entered upon in 1898 by Prof. Raphael Blanchard, of Paris, whose contributions to helminthology have been among the most valuable of recent years. And the belief was freely expressed that the journal would be successful from the start, and would take a high place in the periodical literature of science. The appearance of two numbers of about 180 pages each afford complete justification for this belief, and call for more than a passing notice.

The *Archives de Parasitologie* is to be a quarterly devoted, as the preface says, "to the study of (all) those organisms which are capable of causing disease in man and in the animals." Its scope, in consequence, is decidedly extensive, and deals with parasitology in the broadest sense rather than with helminthology merely. The numbers already issued present articles on bacteria, protozoa, worms, and arthropods, as well as on methods and apparatus, while mycology is also proclaimed to be within its sphere. On reading the prologue of Professor Blanchard one is forced to pause, and wonders whether after all such a field is not too wide to keep a circle of special readers interested; whether mycology and bacteriology, which have their own journals also, appeal in their special development to workers in zoology; and, finally, whether bacteriology in all its wondrous blossoming will not usurp the place of other topics; and yet the perusal of the numbers shows a remarkable balance of interest and influence. Nevertheless, here is an evident danger.

The contents of the numbers at hand deserve more specific mention as indicating clearly the character of the periodical. First should